Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

7. (Currently amended) A method to determine ~~clinical outcome of a breast cancer afflicted subject~~ the risk of cancer recurrence in a subject afflicted with ER+ (estrogen receptor positive) breast cancer, said method comprising

determining an expected cancer recurrence for said subject by assaying a sample of breast cancer cells from said subject for [[the]] a ratio of HoxB13 and IL17BR expression levels that is higher than the mean (average) ratio of HoxB13 and IL17BR expression levels in breast cancer cells; or

determining an expected lack of cancer recurrence for said subject by assaying a sample of breast cancer cells from said subject for a ratio of HoxB13 and IL17BR expression levels that is below the mean (average) ratio of HoxB13 and IL17BR expression levels in breast cancer cells.

8-13. (canceled)

14. (Currently amended) A method of determining ~~prognosis~~ the outcome of a subject having ER+ (estrogen receptor positive) breast cancer, or of a subject afflicted with ER+ breast cancer, if said subject is treated with tamoxifen, said method comprising:

assaying a breast cancer cell sample from said subject ~~for the~~ wherein

a ratio of HoxB13 and IL17BR expression levels that is below the mean (average) ratio of HoxB13 and IL17BR expression levels in breast cancer cells indicates a cancer-free outcome, and

a ratio above the mean (average) ratio of HoxB13 and IL17BR expression levels indicates an outcome comprising cancer recurrence.

15-22. (canceled)

23. (Currently amended) A method to determine therapeutic treatment for an ER+ (estrogen receptor positive) breast cancer patient based upon said patient's expected lack of response to tamoxifen treatment, said method comprising

determining an expected lack of response to tamoxifen treatment for said patient by assaying a sample of breast cancer cells from said patient for [[the]] a ratio of HoxB13 and IL17BR expression levels that is higher than the mean (average) ratio of HoxB13 and IL17BR expression levels in breast cancer cells; and

selecting [[no]] appropriate treatment ~~with tamoxifen~~ for a patient where lack of responsiveness is indicated ~~for said patient~~.

24-38. (canceled)

39. (Currently amended) A method to determine ~~clinical outcome of~~ risk of cancer recurrence in a human subject having ER+ (estrogen receptor positive) breast cancer if treated with tamoxifen, said method comprising

assaying a sample of breast cells from said subject for

increased expression of human HOXB13 sequences or ~~increased or~~ decreased expression of IL17BR sequences, relative to the mean (average) expression thereof in a breast cancer cell, as an indicator of tamoxifen non-responsiveness; or

decreased expression of human HOXB13 sequences, or increased or decreased expression of IL17BR sequences, relative to the mean (average) expression thereof in a breast cancer cell, as an indicator of tamoxifen responsiveness.

40-73. (canceled)

74. (New) The method of claim 7 wherein said assaying comprises determining the expression levels of HoxB13 and IL17BR.

75. (New) The method of claim 7 wherein said subject is human.

76. (New) The method of claim 7 wherein said assaying for the expression levels of HoxB13 and IL17BR comprises detection of nucleic acids from said sample of breast cancer cells.

77. (New) The method of claim 76 wherein said nucleic acids derived from said sample are prepared by mRNA amplification or quantitative PCR.

78. (New) The method of claim 7 wherein said assaying comprises using an array.

79. (New) The method of claim 7 wherein said sample is a ductal lavage or fine needle aspiration sample.

80. (New) The method of claim 7 wherein said sample is a section of tissue from a subject or comprises cells microdissected from said section.

81. (New) The method of claim 7, wherein said assaying for expression of a HoxB13 sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 6, 7, 10 or 11-31.

82. (New) The method of claim 7, wherein said assaying for expression of an IL17BR sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 1, 2, 3, or 8.

83. (New) The method of claim 14 wherein said assaying comprises determining the expression levels of HoxB13 and IL17BR.

84. (New) The method of claim 14 wherein said subject is human.

85. (New) The method of claim 14 wherein said assaying for the expression levels of HoxB13 and IL17BR comprises detection of nucleic acids from said sample of ER+ breast cancer cells.

86. (New) The method of claim 85 wherein said nucleic acids from said sample are prepared by mRNA amplification or quantitative PCR.

87. (New) The method of claim 14 wherein said assaying comprises using an array.

88. (New) The method of claim 14 wherein said sample is a ductal lavage or fine needle aspiration sample.

89. (New) The method of claim 14 wherein said sample is a section of tissue from a subject or comprises cells microdissected from said section.

90. (New) The method of claim 14, wherein said assaying for expression of a HoxB13 sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 6, 7, 10 or 11-31.

91. (New) The method of claim 14, wherein said assaying for expression of an IL17BR sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 1, 2, 3, or 8.

92. (New) The method of claim 23 wherein said assaying comprises determining the expression levels of HoxB13 and IL17BR.

93. (New) The method of claim 23 wherein said subject is human.

94. (New) The method of claim 23 wherein said assaying comprises detecting nucleic acid expression in said sample of ER+ breast cancer cells.

95. (New) The method of claim 94 wherein said nucleic acids from said sample are prepared by mRNA amplification or quantitative PCR.

96. (New) The method of claim 23 wherein said assaying comprises using an array.

97. (New) The method of claim 23 wherein said sample is a ductal lavage or fine needle aspiration sample.

98. (New) The method of claim 23 wherein said sample is a section of tissue from a subject or comprises cells microdissected from said section.

99. (New) The method of claim 23, wherein said assaying for expression of a HoxB13 sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 6, 7, 10 or 11-31.

100. (New) The method of claim 23, wherein said assaying for expression of an IL17BR sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 1, 2, 3, or 8.

101. (New) The method of claim 39 wherein said assaying comprises determining the expression levels of HoxB13 and IL17BR.

102. (New) The method of claim 39 wherein said subject is human.

103. (New) The method of claim 39 wherein said assaying for the expression levels of HoxB13 and IL17BR comprises detection of nucleic acids from said sample of ER+ breast cancer cells.

104. (New) The method of claim 103 wherein said nucleic acids from said sample are prepared by mRNA amplification or quantitative PCR.

105. (New) The method of claim 39 wherein said assaying comprises using an array.

106. (New) The method of claim 39 wherein said sample is a ductal lavage or fine needle aspiration sample.

107. (New) The method of claim 39 wherein said sample is a section of tissue from a subject or comprises cells microdissected from said section.

108. (New) The method of claim 39 wherein said sample is obtained by solid tissue biopsy or a non-invasive procedure.

109. (New) The method of claim 39 wherein said assaying comprises mRNA amplification or PCR amplification of said sequences.

110. (New) The method of claim 39, wherein said assaying for expression of a HoxB13 sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 6, 7, 10 or 11-31.

111. (New) The method of claim 39, wherein said assaying for expression of an IL17BR sequence comprises assaying for expression of a sequence selected from SEQ ID NOS: 1, 2, 3, or 8.

112. (New) The method of claim 7 wherein said assaying comprises hybridization to a polynucleotide comprising sequences of at least 24 nucleotides from the 3' untranslated region, the coding region, or the 5' untranslated region, of a human HOXB13 or IL17BR RNA transcript.

113. (New) The method of claim 14 wherein said assaying comprises hybridization to a polynucleotide comprising sequences of at least 24 nucleotides from the 3' untranslated region, the coding region, or the 5' untranslated region, of a human HOXB13 or IL17BR RNA transcript.

114. (New) The method of claim 23 wherein said assaying comprises hybridization to a polynucleotide comprising sequences of at least 24 nucleotides from the 3' untranslated region, the coding region, or the 5' untranslated region, of a human HOXB13 or IL17BR RNA transcript.

115. (New) The method of claim 39 wherein said assaying comprises hybridization to a polynucleotide comprising sequences of at least 24 nucleotides from the 3' untranslated region, the coding region, or the 5' untranslated region, of a human HOXB13 or IL17BR RNA transcript.

116. (New) The method of claim 14 wherein said breast-cancer-free subject has a low risk of cancer tumor recurrence.

117. (New) The method of claim 14 wherein said survival outcome is breast cancer recurrence.

118. (New) A method to determine the risk of cancer recurrence in a subject afflicted with ER+ (estrogen receptor positive) breast cancer, said method comprising

determining an expected cancer recurrence for said subject by assaying a sample of breast cancer cells from said subject for a ratio of HoxB13 and IL17BR expression levels that is higher than the ratio of HoxB13 and IL17BR expression levels in normal breast cells

119. (New) A method of determining the outcome of a subject having ER+ (estrogen receptor positive) breast cancer, or of a subject afflicted with ER+ breast cancer, if said subject is treated with tamoxifen, said method comprising:

determining an expected cancer recurrence outcome by assaying a breast cancer cell sample from said subject for a ratio of HoxB13 and IL17BR expression levels that is higher than the ratio of HoxB13 and IL17BR expression levels in normal breast cells.

120. (New) A method to determine therapeutic treatment for an ER+ (estrogen receptor positive) breast cancer patient based upon said patient's expected lack of response to tamoxifen treatment, said method comprising

determining an expected lack of response to tamoxifen treatment for said patient by assaying a sample of breast cancer cells from said patient for a ratio of HoxB13 and IL17BR expression levels that is higher than the ratio of HoxB13 and IL17BR expression levels in normal breast cells; and

selecting appropriate treatment for a patient where lack of responsiveness is indicated.

121. (New) A method to determine risk of cancer recurrence in a human subject having ER+ (estrogen receptor positive) breast cancer if treated with tamoxifen, said method comprising

assaying a sample of breast cells from said subject for

increased expression of human HOXB13 sequences, relative to the expression thereof in a normal breast cell, as an indicator of tamoxifen non-responsiveness.

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